

THROMBECTOMY CATHETER AND SYSTEM

ABSTRACT OF THE DISCLOSURE

Cross stream thrombectomy catheter and system for fragmentation and removal of thrombus or other material from blood vessels or other body cavities. High velocity saline jets emitted from a toroidal loop jet emanator or other jet emanator in a catheter distal end entrain fluid through inflow orifices, and with flow resistances create a back-pressure which drives cross stream streams through outflow orifices in a radial direction and thence radially and circumferentially to apply normal and drag forces on thrombotic deposits or lesions in the blood vessel or other body cavity, thereby breaking apart and transporting thrombus particles to be entrained through the inflow orifices, whereupon the high velocity jets macerate the thrombus particles which then transit an exhaust lumen or recirculate again via the outflow orifices.

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PARTS LIST

10	cross stream thrombectomy catheter	38	distal end
10A	cross stream thrombectomy catheter	40	jet body
		41	lumen
11	threaded high pressure connection	42	exhaust lumen
		43	reduction
12	manifold	44	hypo-tube
14	hemostasis unit	45	polymeric tube
16	Luer fitting	46	toroidal loop jet eminator
18	manifold branch	48	marker coil
20	Luer connection	50	circular space
22	manifold branch	51	guidewire
24	Luer fitting	52	distal tip (of exhaust tube)
26	strain relief	54	closely wound portion
28	exhaust tube	56	loosely wound portion
30	proximal end	57	interior wall
32	outflow orifice	58	interior wall
34	inflow orifice	59	proximal area
36	tapered and flexible tip assembly	60a-n	jet orifices
37	tapered tube		

62	semi-toroidal loop jet emanator	87	extreme end
64a-n	jet orifices	88	outflow end
66	semi-circular space	89	necked-down portion
		90	distal end
68	L-shaped jet emanator	91	J-shaped jet emanator
70	jet orifice	92	tip
72	J-shaped jet emanator	93	housing
74a-n	jet orifices	94	bore
75	J-shaped jet emanator	95	orifice member
76	blood vessel	96	U-shaped jet emanator
77	jet orifice	98	jet orifice
78	thrombotic deposit or lesion	100	inflow orifice
		102	high velocity jet
79	extreme end	104	outflow orifice
80	high velocity jets	106	cross stream jet
81	J-shaped jet emanator	108	tip
		110	inflow orifice
82	cross stream jets	112	curved surface
83	jet orifice	114	distal end
84	distal end	115	bore
85	orifice	118	high velocity jet
86	inflow end	122	distal end

124 tip
126 bore
128 toroidal loop jet emanator
130a-n jet orifices
132 inflow orifice
134a-n high velocity jets
136 circular space
137 tube
138 distal end
140 jet body
142 jet
143 lumen
144 guidewire